



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,820	09/07/2006	In-Soo Park	11720-001-999	7486
20583	7550	11/28/2008		
JONES DAY 222 EAST 41ST ST NEW YORK, NY 10017			EXAMINER DONADO, FRANK E	
			ART UNIT 2617	PAPER NUMBER
			MAIL DATE 11/28/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/565,820

Applicant(s)

PARK ET AL.

Examiner

FRANK DONADO

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SG/US)
Paper No(s)/Mail Date 10/24/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Amendment

Art Unit Location

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 8 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, a “mobile WiMax service”, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7 and 9-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Volpi, et al (US PG Publication 2004/0174900). From now on, Volpi, et al, will be referred to as Volpi.

Regarding claim 1, Volpi teaches in a device for repeating a wireless internet access of a user terminal between a wireless internet access network and the user terminal, a wireless internet access repeater **(A mesh network is an internet network, and a wireless terminal can gain access to it in a point-to-multipoint (PTM) subsystem through a wireless repeater, Figure 7A, Paragraph 48, lines 10-14 and Paragraph 46, lines 11-14)** comprising: a first transmit and receive unit for transmitting/receiving signals to/from the wireless internet access network **(A mesh access point subsystem converts signals between a PTM network and a mesh network (internet), in a bi-directional wireless repeater, Paragraph 46, lines 3-6, Paragraph 47, lines 1-2 and Figures 2 and 7A)** by a first communication type **(mesh protocol, Paragraph 45, lines 4-6)**; a second transmit and receive unit for transmitting/receiving signals to/from the user terminal **(A PTM subsystem converts signals between the mesh network and PTM network out to a user terminal in a bi-directional wireless repeater, Paragraph 46, lines 6-9 and Paragraph 47, lines 1-2)** by a second communication type **(PTM protocol, Paragraph lines 9-11)**; and a media access control (MAC) conversion manager for processing data included in the signal following the first communication type input by the first transmit and receive unit into a second communication type format **(A signal is converted by a mesh access point subsystem from a mesh network protocol, 1st communication type to a**

PTM protocol, 2nd communication type, and the Point to Multipoint network employs Media Access Control, Paragraph 8, lines 7-10), transmitting the second communication type format data to the second transmit and receive unit (The mesh access point subsystem transmits the signal to the 2nd transmit/receive unit, which is a PTM access point subsystem, after conversion, Figure 7A), processing data included in the second communication type signal input by the second transmit and receive unit into a first communication type format (A signal is converted by a PTM subsystem from a mesh network protocol, 2nd communication type to a mesh network protocol, 1st communication type, Paragraph 8, lines 10-14), and transmitting the first communication type format data to the first transmit and receive unit (The PTM subsystem transmits the signal to the 1st transmit/receive unit, which is a mesh access point subsystem, after conversion, Figure 7A).

Regarding claim 2, Volpi teaches the wireless internet access repeater of claim 1, further comprising an operation controller for controlling the MAC conversion manager and controlling transmitting and receiving repetition of the signals which are transmitted according to the first and second communication types **(A wireless repeater PTM subsystem that employs Media Access Control serves as a control mechanism for different forms of media during the repeater process, Paragraph 8, lines 4-14 and 18-21).**

Regarding claim 3, Volpi teaches the wireless internet access repeater of claim 1, wherein the MAC conversion manager comprises: a frame monitor for managing order information of the same data frame according to header information of the data frame included in the signals received by the first or second transmit and receive unit **(A 1st header is changed to a 2nd header while transmitting data to/from a 1st network to a 2nd network, Paragraph 73, lines 1-9)**; a frame processor for converting the data frame into a format which follows a MAC structure corresponding to a desired communication type **(A packet of data is formatted to fit dissimilar networks in a wireless repeater, Paragraph 73, lines 1-9)**; a channel controller for controlling a modulation rate and a bit rate of the transmitted data frame according to the communication type **(The wireless repeater employs a GPRS (General Packet Radio Service) to control the bit and modulation rate in transmitting stored data between the dissimilar networks, Paragraph 74, lines 1-7)**; and a standby manager for controlling data rates according to the established modulation rate and the bit rate **(Traffic control is handled by the PTM subsystem in Figure 7A by employing a transmission control protocol and is contained within the wireless repeater, Paragraph 48, lines 10-14).**

Regarding claim 4, Volpi teaches the wireless internet access repeater of claim 3, wherein the MAC conversion manager further comprises: a channel allocator for allocating a channel to the data frame included in the signal received through the second transmit and receive unit **(A channel sense and select module, 1070 in**

Figure 10B, determines which channel to be used in a wireless repeater transmitting the data frame to a 2nd transmit/receive unit, in this case the PTM network transceiver 1065 of Figure 10B, Paragraph 62, lines 1-5); and a channel manager for managing channel allocation information and channel states (A lookup table is employed for performing the channel selection, Paragraph 62, lines 5-6).

Regarding claim 5, Volpi teaches the wireless internet access repeater of claim 1, further comprising: a first MAC processor for repeating transmission of the data frame between the MAC conversion manager and the first transmit and receive unit; and a second MAC processor for repeating transmission of the data frame between the MAC conversion manager and the second transmit and receive unit **(Filters are employed for a 1st and 2nd network, 710 and 735 of Figure 7A, that filter out/kick back unwanted frequencies, requiring repetition of signals, Paragraph 47, lines 7-11 and 22-26).**

Regarding claim 6, Volpi teaches the wireless internet access repeater of claim 1, wherein the user terminal is operated in a first mode for transmitting and receiving signals in a first frequency band according to the first communication type, and a second mode for transmitting and receiving signals in a second frequency band according to the second communication type **(Bandwidth is higher for a 1st network with a 1st communication type than for a 2nd network with a 2nd communication type, Paragraph 46, lines 14-17).**

Regarding claim 7, Volpi teaches the wireless internet access repeater of claim 1, wherein the first communication type is a wireless internet access service type (**The mesh network that can be the internet, Figures 2 and 7A**), and the second communication type is a wireless local area network service type (**The wireless router access points allow the wireless local area network service to users, Paragraph 36, lines 5-14**).

Regarding claim 9, Volpi teaches the wireless internet access repeater of claim 1, wherein the wireless Internet access repeater is located in a blanket area (**Paragraph 42, lines 1-4**).

Regarding claim 10, Volpi teaches in a method for repeating a wireless internet access of a user terminal between a wireless internet access network and the user terminal, a wireless Internet access repetition method (**The internet is the mesh network, and a wireless terminal can gain access to it in a point-to-multipoint (PTM) subsystem through a wireless repeater, Figure 7A, Paragraph 48, lines 10-14 and Paragraph 46, lines 11-14**) comprising: (a) receiving a signal in a first frequency band following a first communication type and being transmitted from the wireless internet access network (**The mesh (internet) access point subsystem receives signals from the wireless internet network in the mesh protocol format, Paragraph 46, lines 3-6, and Figure 7A**); (b) converting the received signal into a

second communication type format (**A PTM subsystem converts signals from the mesh protocol to the PTM protocol, Paragraph 46, lines 6-9**); (c) processing the converted signal into a signal in a second frequency band following the second communication type (**A signal is converted by a mesh access point subsystem from a mesh network protocol, 1st communication type, to a PTM protocol, 2nd communication type, and bandwidth is higher for the mesh network than for the PTM network, Paragraph 8, lines 7-10 and Paragraph 46, lines 14-17**), and transmitting the processed signal to the user terminal (**The PTM subsystem transmits the signal to terminal users, Figure 7A**); (d) receiving a signal in a second frequency band following the second communication type and being transmitted from the user terminal (**The PTM access point subsystem receives the signal in a frequency that is lower than that of the mesh network, Figure 7A and Paragraph 46, lines 14-17**); (e) converting the received signal into the first communication type format (**Paragraph 46, lines 3-6**); and (f) processing the converted signal into a signal in the first frequency band according to the first communication type (**The converted signal is processed and the frequency is changed to a higher frequency specific to the mesh network, Paragraph 8, lines 10-14**), and transmitting the signal to the wireless internet access network (**The PTM subsystem transmits the converted signal to the mesh/ wireless internet network, Figure 7A**).

Regarding claim 11, Volpi teaches the wireless internet access repetition method of claim 10, wherein the first communication type is a wireless internet access service

type (**The mesh network that can be the internet, Paragraph 48, lines 10-14, Paragraph 46, lines 11-14 and Figure 7A**), and the second communication type is a wireless local area network service type (**The wireless router access points allow the wireless local area network service to users, Paragraph 36, lines 5-14**).

Regarding claim 12, Volpi teaches the wireless internet access repetition method of claim 10, wherein (b) comprises: analyzing header information of a data frame included in the first communication type signal (**A 1st header is changed to a 2nd header while transmitting data to/from a 1st network to a 2nd network, Paragraph 73, lines 1-9**), and processing the same data frames in a predetermined order; converting the data frame into a format which corresponds to a MAC structure following the second communication type (**A packet of data is formatted to fit dissimilar networks in a wireless repeater that allows various forms of media, Paragraph 73, lines 1-9**), and storing it in a temporary storage unit (**The wireless repeater employs a GPRS, General Packet Radio service, that stores formatted data, Paragraph 74, lines 1-7**); and controlling a modulation rate and a bit rate and outputting the stored data frame according to the established modulation rate and the bit rate in order to transmit the data frame as a second communication type signal (**The wireless repeater employs the (GPRS) to control the bit and modulation rate in transmitting stored data between the dissimilar networks, Paragraph 74, lines 1-7**).

Regarding claim 13, Volpi teaches the wireless internet access repetition method of claim 10, wherein (e) comprises: analyzing header information of a data frame included in the second communication type signal, and processing the same data frames in a predetermined order **(A 1st header is changed to a 1st header while transmitting data to/from a 2nd network to a 1st network, Paragraph 73, lines 1-9);** converting the data frame into a format which corresponds to a MAC structure following the first communication type **(A packet of data is formatted to fit dissimilar networks in a wireless repeater that allows various forms of media, Paragraph 73, lines 1-9),** and storing it in a temporary storage unit **(GPRS allows for storage of data packet information, Paragraph 74, lines 1-7);** allocating a channel for the data frame **(The wireless repeater employs GPRS, and this uses channel allocation, Paragraph 74, lines 1-7);** and controlling a modulation rate and a bit rate, controlling a data rate according to a difference between the established modulation rate and the bit rate **(In GPRS, transfer speed depends on the channel coding used, Paragraph 74, lines 1-7)** and outputting the data frame to the allocated channel in order to transmit the data frame as a first communication type signal **(A data frame is processed and output to the appropriate channel in the appropriate communication type in the wireless repeater with 1st and 2nd communication type signals, using GPRS, Paragraph 73, lines 1-4 and Paragraph 74, lines 1-7).**

Regarding claim 14, Volpi teaches the wireless internet access repetition method of claim 10, wherein the wireless internet access repetition method repeats the

wireless internet access of the user terminal located in a blanket area (**The wireless repeater employs GPRS in a system that includes visited network, such as the internet, and home networks, where the home networks define users over a coverage area, Paragraph 74, lines 1-7 and Figure 11).**

Regarding claim 15, Volpi teaches in a method for a user terminal to access a wireless internet access network, a wireless internet access method comprising: (a) operating the user terminal in a first mode to be accessed to the wireless internet access network according to a first communication type (**A mobile terminal is used to access the internet in a system that employs a GPRS tunneling service and dissimilar communication types, Paragraph 70, lines 15-20, Paragraph 72, lines 8-11 and Figure 11**); (b) determining whether the user terminal is located in the blanket area depending on a received state of the signal transmitted according to the first communication type (**A roaming function is employed in the system, Paragraph 70, lines 1-5**); (c) searching for a repeater which supports mutual switching between the first and second communication types when the user terminal is found in the blanket area (**Paragraph 72, lines 1-5**); and (d) operating the user terminal in a second mode to be accessed to the wireless internet access network through the repeater according to the second communication type (**A mobile terminal is used to access the internet in a system that employs a GPRS tunneling service and dissimilar communication types, Paragraph 70, lines 15-20, Paragraph 72, lines 8-11 and Figure 11**).

Regarding claim 16, Volpi teaches the wireless internet access method of claim 15, wherein the first communication type is a wireless internet access service type, and the second communication type is a wireless local area network service type (**GPRS supports communication between the internet and a wireless local area network, and this is what the system uses, Paragraph 74, lines 1-7).**

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Volpi, in view of Elbatt, et al (**US PG Publication 2005/0152318**). Henceforth, Elbatt, et al, will be referred to as Elbatt.

Regarding claims 8 and 17, Volpi teaches the limitations of claim 7 and 16, respectively. Volpi fails to teach the first communication type is a communication type which follows a mobile WiMAX service. Elbatt teaches a wireless communications system that transmits signals over 2.3 GHz (**Paragraph 25, lines 14-19**). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Volpi to use 2.3 GHz as the lower frequency as a matter of design choice.

Response to Arguments

9. Applicant's arguments, see Claims 1, 8 and 17, filed 9/16/08, **with respect to the 35 USC 112 rejections**, have been fully considered and are persuasive. The 35 USC 112 rejections of claims 1, 8 and 17 have been withdrawn.

10. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "a 2.3 GHz portable internet service") are not recited in the **currently rejected claims**. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

11. Applicant's arguments with respect to claims 8 and 17 have been considered but are moot in view of the new ground(s) of rejection.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANK DONADO whose telephone number is (571) 270-5361. The examiner can normally be reached Monday-Friday, 9:30 am-6 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-270-6361.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-273-8300.

Frank Donado
Art Unit 2617

/Rafael Pérez-Gutiérrez/

Supervisory Patent Examiner, Art Unit 2617